Minutes (Draft)
Scientific Advisory Committee Meeting
January 8, 2008
DFS Central Laboratory, Classroom 1

Committee Members Present:

Dr. Frederick Bieber
Mr. Joseph Bono
Dr. Dale Carpenter
Mr. Dominic Denio
Dr. Arthur Eisenberg
Mr. Barry Fisher, Chair
Ms. Deborah Friedman
Dr. Dan Krane (via teleconference)
Mr. Pete Marone
Dr. Alphonse Poklis
Dr. Norah Rudin
Mr. Kenneth Smith

Committee Member Absent:

Dr. Jose Almirall

Staff Members Present

Ms. Wanda Adkins, Office Manager
Mr. Jeffrey Ban, Central Laboratory Director
Dr. David Barron, Technical Services Director
Ms. Eileen Davis, Trace Section Chief
Ms. Leslie Ellis, Human Resource Manager
Ms. Michele Gowdy, Department Counsel
Ms. Margie Harris, Blood Pattern Section Supervisor
Ms. Linda Jackson, Controlled Substances Section Chief
Ms. Katie Jones, Administrative Specialist Forensic Biology
Mr. Ronald Layne, Director of Administration and Finance
Ms. Alka Lohmann, Breath Alcohol Section Chief
Mr. Mike Moore, Questioned Documents Section Chief
Ms. Carisa Onorato, Administrative Specialist Breath Alcohol
Mr. Kevin Patrick, Western Laboratory Director
Ms. Julia Pearson, Toxicology Section Chief
Mr. James Pickelman, Firearm/Toolmark Section Chief
Mr. Steven Sigel, Deputy Director
Mr. Sherwood Stroble, Policy, Planning and Budget Manager
Ms. Amy Wong, Northern Laboratory Director

Ms. Susan Uremovich, Eastern Laboratory Director
Mr. Robin Young, Latent Section Chief

Call to Order:

Mr. Fisher called the meeting to order at 9:02 a.m.

Mr. Fisher acknowledged Wanda Adkins as the temporary secretary for the meeting.

Adoption of Agenda:

Mr. Fisher asked if there were any additions or changes to the draft agenda. There were none. There was a motion to adopt the agenda, seconded and adopted without amendment.

Adoption of Minutes:

Mr. Fisher asked if there were any changes that needed to be made to the draft minutes from the August 7, 2007 meeting. There were none. Mr. Smith made a motion to accept the draft minutes, seconded and accepted by unanimous vote.

Director's Report:

Mr. Marone directed members to the information that had been provided on 30-60-90 day workload summary reports by section as of January 1, 2008.

The DNA Section Chief posting has just closed and interviews will be conducted shortly – again Minimum Qualifications include:

-Master's Degree or Waiver by ASCLD
-3 years of Laboratory Experience as a Forensic Nuclear DNA examiner
-QA/QC Experience
-Expert Testimony
-Research and Methods Development

Building update:

-Northern Laboratory – Construction is continuing with an expected move-in date in April of 2009
-Central Laboratory – Administration space in Biotech 8 is projected to be ready in February
-Eastern Laboratory – We have acquired 5,700 square feet with another 15,000 space to be available in late summer on the 5th floor for expansion
-Western Laboratory – In the future we hope to be able to acquire additional land.

Dr. Bieber inquired if some of the future Committee meetings could be held in the regional laboratories. Mr. Marone explained that the Code of Virginia requires all meetings to be held in the Richmond area; however he would check to see if there was a possibility of including trips to the regional laboratories for future meetings.

Mr. Marone reported on the following grants: 1) NIJ – Forensic Science Training Development and Delivery Program – development of new training, enhancement of existing training, and delivery of new and existing forensic science training – no $$ amount specified – application due Feb. 4; 2) NIJ – Solving Cold Cases with DNA – reviewing, investigating violent crime cold cases that have potential to be solved using DNA – awards not to exceed $500,000; 3) NIJ - Social Science Research in Forensic Science – improve the practice of processing of impression evidence, including fingerprint, tool marks, bite marks, and shoe prints – no dollar amount specified for individual awards; 4) NIJ - "Research and Development in the Area of Controlled Substances Detection and Analysis" – We have submitted a concept paper requesting $50,100. The title of the proposed project is "Development of a Thin Layer chromatography Method for the Separation of Enantiomers Using Chiral Mobile Phase Additives." The project seeks to find low cost alternatives for separating enantiomers which are controlled differently, such as dextromethorphan (NCS) and levomethorphan (Schedule II).

The DNA/Serology case file review of all 534,000 files have been reviewed and pre-screened. You have been provided with a flow chart which outlines in very rough fashion the screening process. The protocol has been completed in draft form and the Governor's Office is working with members of the Virginia Bar to approve a working protocol for these cases. A total of 182 cases have been sent to the contractor with 81 waiting to be sent. DFS is continuing to send cases for testing as they are determined to be eligible and will be attempting to handle persons currently incarcerated in an expedited fashion to the extent possible.

Mr. Bono inquired about the interpretation of the data from these samples? Mr. Marone explained that the contractor runs the samples and that DFS employees are evaluating all the data. Dr. Bieber inquired if the Department was tracking the amount of hours consumed on this project? Dr. Barron responded that it has taken at least 2 years for the files to be reviewed. The screening of data by the DFS examiners is difficult.

DFS has been validating and training on Y-STR technology for several years and expects to put this type of testing on-line sometime before July of 2008.

The Mitochondrial lab staff has received Mito and CODIS training and has ordered servers for both programs (Mito and CODIS), they should be operational sometime in February. The manuals are currently being drafted and the laboratory should be online and processing casework this spring.

Blood vial kits – A new kit has been created which should make the process easier to law enforcement – the kit will include pictograms and instructions that are more precise. In addition, the Certificate of Blood Withdrawal will have more user-friendly cuts and instructions to clearly mark the portions which need to be affixed to the blood vial.

Breath alcohol instrumentation – The six month evaluation period will end in late February and we expect to award contract by early March. The first shipment of instruments will be 75 days after the contract is awarded with the remaining of the instruments coming 150 days after the contract is awarded.

Legislation – the General Assembly convenes on January 9, 2008. DFS will only have some housekeeping issues on ammunition and sex offender issues in the DNA data bank.

Dr. Barron, DFS, gave a presentation addressing a previous request from the Scientific Advisory Committee to research and review discipline specific certification requirements from relevant certification bodies; research and review the training guidelines recommended by Scientific Working Groups (SWG's) and review the individual DFS examiner training programs, criteria and recommendations of the certification bodies.

Norah Rudin, Ph.D. and Arthur Eisenberg, Ph.D., DNA Subcommittee, reported to the committee information requested on contextual bias and "inconclusive" findings. This report will be attached as an Addendum to these minutes.

"Inconclusives" in the first 31 Mary Jane Burton cases - Dr. Rudin reported that the subcommittee had full access to all the information they needed. Dr. Eisenberg commented that DFS has done everything in its power to research samples; he felt that DFS had adequately fulfilled its obligations to the 31 cases. He further stated that DFS has done an admiral job and Dr. Rudin agreed.

Contextual bias – The subcommittee made recommendations for DFS to consider minimizing the perception of and potential for contextual bias. The Scientific Committee decided to give DFS time to review and study the recommendations in depth and report back to the Committee at its next meeting.

New Business – Mr. Denio gave a presentation to the Committee and showed a DVD from 60 Minutes on Lead Based Bullet Analysis conducted by the FBI.

The next meeting of the Scientific Committee will be held on August 5, 2008 at 9:00 a.m.

Public Comments – None

The meeting adjourned at 1:10 p.m.

ADDENDUM:

January 8, 2007

Report to the Commonwealth of Virginia Scientific Advisory Committee by the DNA Subcommittee on confirmation bias and "inconclusive" conclusions

(Norah Rudin, Ph.D. and Artie Eisenberg, Ph.D.)

Subcommittee statement on contextual bias:

Among the many reasons that Forensic DNA analysis has become the gold standard for forensic science is the relatively discrete nature of the data. For strong, single source samples, a profile can readily be determined, and is subject to little or no analyst judgment. However, ambiguity may arise when interpreting more complex samples, such as those containing multiple contributors, of poor quality (e.g. degraded or inhibited DNA), of low quantity (e.g. contact samples), or various combinations of these challenging situations. These kinds of samples are encountered with increasing frequency, as the sensitivity of the technology has increased, and as law enforcement has become more sophisticated about the kinds of samples they submit for analysis. Difficult samples are also frequently encountered when reanalyzing historical cases, in which samples were not collected and preserved using the precautions necessary for DNA analysis.

It is for these types of challenging samples, where the evidence profile may not exactly "match" a reference profile, that confirmation bias becomes a concern. The interpretation of an evidentiary DNA profile should not be influenced by information about a subject's DNA profile. Each item of evidence must be interpreted independently of other items of evidence or reference samples. Yet forensic analysts are commonly aware of submitted reference profiles when interpreting DNA test results, creating the opportunity for confirmatory bias, despite the best intentions of the analyst. Furthermore, analysts are sometimes exposed to case information, such as eyewitness identifications or suspect confessions, that may compound an unintentional confirmatory bias potentially leading to a false inclusion.

While it is clear that forensic scientists must be provided with case information in order assist law enforcement to determine the best and most relevant samples, and to make informed decisions about the processing of those samples, it is also clear that the analysts who interpret the data must not inadvertently allow case information, in particular knowledge of reference profiles, to influence their interpretation of an evidentiary profile. The following general scheme should serve to minimize the perception of and potential for confirmatory bias:

1. Data from each evidentiary sample must be interpreted independently by two qualified analysts
    a. Both analysts must determine the evidence profile prior to any comparison with reference profiles.
    b. Allele calls should be based on defined objective criteria.
    c. Each analyst must document the specific allele calls, as well as any other notable characteristics of the profile, such as poor quality, low quantity, or possible multiple contributors.
    d. If, upon comparison, discrepancies are noted, the reasons for and resolution of any such discrepancies must be fully documented.

2. Reference profiles will be compared to evidentiary profiles only after the evidence profiles are interpreted and agreement is reached by the two qualified analysts.

    a. The comparison must be performed independently by each analyst.

    b. If, upon comparison, discrepancies are noted, the reasons for and resolution of any such discrepancies must be fully documented.

Members of the subcommittee are willing to work with the laboratory to assist in incorporating these safeguards into the DNA analysis protocol.

Subcommittee statement on "inconclusives" in the first 31 Mary Jane Burton cases

At the August 8, 2007 Forensic Science Board meeting, A motion was passed to request the Scientific Advisory Committee to "study, report, and make recommendations on the criteria being used by the lab to report a case as inconclusive in the Mary Jane case file review."

Because the report containing these conclusions is considered part of the Governor's working papers, and no separate reports were prepared by the lab, it became a challenge for the subcommittee to gain access to the information that it was requested to review. Ultimately the members of the subcommittee were granted access to the document during a visit to the laboratory that occurred on January 7, 2008.

During this visit it was learned that 9 of the original 31 cases had been reported as "inconclusive." Of the remaining 22 cases, in 6 instances, the suspect was excluded as a contributor of the evidence, however in only 2 of those cases did this information provide the factual basis for an exoneration. In the other 4 exclusions, the evidence either was not relevant or did not change the facts of the case, and the convictions stood. In 16 cases, the original suspect was confirmed as a possible contributor of relevant evidence and the convictions stood.

As directed, the subcommittee focused on the 9 "inconclusive" cases. Upon reviewing the Governor's report, it was found that 4 of these cases were reported as inconclusive because appropriate reference samples were not available. In these cases, results were obtained for the evidence samples that could be compared when and if reference samples were obtained. In 5 of the 9 "inconclusive" cases it was reported that no results were obtained for any of the evidence samples. The subcommittee requested access to the sample data to independently assess this conclusion for each of the 5 cases. Mr. Ban and his support staff kindly provided us with full access to both the case file and electronic data. For 4 of these 5 cases, the subcommittee agreed that no results were obtained; the gel lanes were effectively blank. However, in one case, some weak data was visually observed, and corroboration of this data was found in the case file. Mr. Ban agreed with the subcommittee that, although the data were very weak, and no reliable comparisons could be performed with any reference samples, that the existence of the data should have been reported. Specifically, we agreed on the following statement to describe the results:

> *The results indicate the presence of a limited amount of male DNA. It is not possible to determine the number of contributors or if female DNA may also be present. Insufficient information exists to perform a meaningful comparison with any reference sample.*

The subcommittee felt that it was important to provide this information so that interested parties could be fully informed that limited genetic material existed that might be tested in more sensitive systems, such as Y-STRs or mini-STRs.

In light of the confusion resulting from the categorization of these 9 cases as "inconclusive", the subcommittee suggested a categorization scheme intended to simplify the reporting process and also to clarify and limit the responsibilities of the laboratory. Once cases are received back from the contract laboratory, they can be readily categorized as follows: